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December 4, 1992

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

Ms. Donna Searcy
Secretary
Federal Communications Commission
1919 M Street, N.W.
Washington, D.C. 20554

Re: ET Docket No. 92-28; RM-7771;
RM-7773; RM-7805; RM-7806; PP-29;
PP-30; PP-31; PP-32; PP-33

Dear Ms. Searcy:

On behalf of Ellipsat Corporation, I am transmitting herewith an original and four copies of its Comments with respect to the Notice of Proposed Rulemaking and Tentative Decision in the above-referenced proceedings which relate to allocation of the 1610-1626.5 and 2483.5-2500 MHz bands for use by the mobile-satellite service.

Should there be any questions concerning this matter, kindly communicate with the undersigned.

Sincerely,

Jill Abeshouse Stern

Jill Abeshouse Stern

JAS:csg
Enclosures

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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Amendment of Section 2.106 of	)	ET Docket No. 92-28
the Commission's Rules to	)	RM-7771 PP-29 PP-32
Allocate the 1610-1626.5 MHz	)	RM-7773 PP-30 PP-33
and the 2483.5-2500 MHz Bands	)	RM-7805 PP-31
for Use by the Mobile-Satellite	)	RM-7806
Service, Including Non-	)	
geostationary Satellites.	)	

COMMENTS OF ELLIPSAT CORPORATION

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Counsel to Ellipsat Corporation

December 4, 1992

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SUMMARY

In these comments, Ellipsat Corporation responds to the Commission's Notice of Proposed Rulemaking and Tentative Decision proposing to allocate spectrum in the 1610-1626.5 and 2483.5-2500 MHz bands for mobile satellite services. Ellipsat strongly supports the proposed allocation for MSS, but urges that the spectrum be designated exclusively for LEOS. An exclusive allocation for LEOS reflects the overwhelming interest of the applicants and the public, and ensures that the benefits of new mobile communication services will be realized expeditiously.

Ellipsat also urges the Commission to allocate specific fixed-satellite service frequencies for LEO feeder links, or to specify specific bands in which LEO feeder links will be permitted on a primary basis. Designation of primary feeder link frequencies is critical for international coordination, and for providing the certainty that is required for applicants as they move forward with design and implementation of their systems. Ellipsat has identified 3600-3700 MHz (downlink) and 6425-6525 MHz (uplink) as suitable frequencies for LEO feeder links, and asks that the Commission take appropriate steps to allocate these frequencies in this proceeding.

Ellipsat supports adoption of the international power flux density limits and coordination procedures that were adopted at WARC-92.

Ellipsat agrees with the Commission's conclusion that the public interest will be best served by multiple LEO operators. Spread spectrum offers the greatest potential for operation by multiple systems, both domestic and international, with the corresponding public benefits of lower costs and diverse services. The Commission should not take any action in this proceeding that would limit or preclude the recognized benefits of spread spectrum.

Ellipsat strongly recommends that the current earth-to-space direction in the 1610-1626.5 MHz band be maintained in order to maximize the number of systems that can be accommodated in the frequency band. If bi-directional operation is authorized, it is critical that downlink operations be permitted only on a secondary basis as defined in Commission Rule 2.105 (d)(4) to ensure that such operations do not interfere with or otherwise place operating constraints on transmitting earth stations.

Finally, Ellipsat supports the Commission's tentative decision not to award a preference to any of the applicants in this proceeding.

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Amendment of Section 2.106 of	)	ET Docket No. 92-28
the Commission's Rules to	)	RM-7771 PP-29 PP-32
Allocate the 1610-1626.5 MHz	)	RM-7773 PP-30 PP-33
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for Use by the Mobile-Satellite	)	RM-7806
Service, Including Non-	)	
geostationary Satellites.	)	

COMMENTS OF ELLIPSAT CORPORATION

Ellipsat Corporation ("Ellipsat"), by its attorneys, hereby submits its comments with respect to the Notice of Proposed Rulemaking and Tentative Decision (the "Notice") in the above-captioned proceeding, released September 4, 1992.

I.
SUMMARY OF POSITION

In the Notice, the Commission proposes to allocate spectrum in the 1610-1626.5 and 2483.5-2500 MHz bands for the mobile satellite service (MSS), including non-geostationary satellite systems. In addition to spectrum allocation, the Notice invites comments on a range of issues related to implementation of MSS in the subject frequency bands, including feeder links; international power flux density limits and coordination procedures; sharing with GLONASS; and bi-directional operations.

The Notice also includes the Commission's tentative decision that no pioneer's preference should be awarded in this proceeding.

Ellipsat is one of six applicants seeking authority to operate a satellite system in the RDSS bands, and the first company to file an application with the Commission in the subject frequency bands for a low earth orbiting satellite system. In seeking to implement its system, Ellipsat filed a petition for rulemaking to expand the range of permissible services that can be provided in the RDSS bands to include mobile satellite service. Ellipsat also supported the international spectrum allocation for mobile satellite service at WARC-92 and participated in the related Commission proceedings.

Ellipsat strongly endorses the Commission's proposal in the Notice to allocate spectrum in the 1610-1626.5 and 2483.5-2500 MHz bands for MSS. The proposed allocation is consistent with the international allocation adopted at WARC-92, and will facilitate introduction of new, publicly beneficial satellite communications services. The Commission should move forward as expeditiously as possible to expand the range of permissible satellite services that can be offered in the relevant bands by adopting the proposed spectrum allocation.

While spectrum allocation is, and should be, the central focus of this rulemaking proceeding, there are a number of related issues that need to be considered at this time. Resolution of these issues is critical to ensure timely implementation of the proposed satellite services and will

determine whether the public benefits envisioned will ultimately be realized. These issues, and Ellipsat's position with respect to each issue, may be summarized as follows:

Exclusive Spectrum Allocation for LEOS.

Ellipsat supports the proposed spectrum allocation for mobile satellite service in the 1610-1626.5 and 2483.5-2500 MHz bands on a co-primary basis with RDSS, but urges that the spectrum be designated exclusively for LEOS.

Primary Allocation for LEO Feeder Links.

The Commission should allocate specific fixed-satellite service frequencies for LEO feeder links, or specify specific bands in which LEO feeder links will be permitted on a primary basis. Designation of primary feeder link frequencies is critical for international coordination, and for providing the certainty that is required for applicants as they move forward with design and implementation of their systems. Ellipsat has identified 3600-3700 MHz (downlink) and 6425-6525 MHz (uplink) as suitable frequencies for LEO feeder links, and

requests that allocation of these frequencies be addressed in this proceeding.

Adopt International Power Flux Density Limits and Coordination Procedures.

Ellipsat supports adoption of the international power flux density limits and coordination procedures that were adopted at WARC-92.

Ensure Multiple Entry.

Ellipsat agrees with the Commission's conclusion that the public interest will be best served by multiple LEO operators. Spread spectrum offers the greatest potential for operation by multiple systems, both domestic and international, with the corresponding public benefits of lower costs and diverse services. The Commission should ensure that no actions are taken in this proceeding to preclude or limit the acknowledged benefits of spread spectrum.

Restrict Bi-Directional Operation.

Ellipsat strongly recommends that the current earth-to-space direction in the 1610-1626.5 MHz band be maintained in order

to maximize the number of systems that can be accommodated in the frequency band. If bi-directional operation is authorized, it is critical that downlink operations be permitted only on a secondary basis as defined in Commission Rule 2.105(d)(4) to ensure that such operations do not interfere with or otherwise place operating constraints on transmitting earth stations.

No Pioneer's Preference.

Ellipsat supports the Commission's tentative decision not to award a preference to any of the applicants in this proceeding.

II.
THE COMMISSION SHOULD ALLOCATE SPECTRUM EXCLUSIVELY FOR LEO MOBILE SATELLITE SERVICES

In the Notice, the Commission proposes to establish new primary allocations at 1610-1626.5 MHz and 2483.5-2500 MHz for a mobile satellite service. The Notice correctly points out that there is "considerable interest" in developing new frequencies in these bands, and that the proposed allocation would be consistent with the new international allocation. Ellipsat strongly endorses the proposed allocation, and the expansion of permissible services that it would allow. The Commission should move forward promptly with the allocation in order to facilitate

implementation of the new, publicly beneficial services that have been proposed.

While spectrum allocation is a critical first step, it is equally important that the Commission designate the allocation exclusively for low earth orbiting systems. In the Notice, the Commission suggests that it wishes to retain the "maximum flexibility" in considering the MSS proposals now before it. The reality is, however, that, unless the band is designated exclusively for LEOS, the benefits of the new service may never be realized.

The Commission presently has six applications before it: five applications propose new, low earth orbiting satellite systems; the sixth is an application for expansion of a geostationary mobile satellite system. It is clear that the predominant interest in this band is for a LEO system. There is no justification for permitting expansion of a geostationary system that is not operating and which already has exclusive use of another frequency band. In addition, there is sufficient spectrum elsewhere for expansion or introduction of geostationary systems.

Moreover, international regulations, including power flux density limits, effectively ensure that a geostationary system could not operate in the frequency bands. The intention at WARC-92 was to limit the bands to LEO systems, and the Commission should take action to effectuate this intention.

Failure to limit the band to LEO systems will ensure that this proceeding will, at best, be protracted, and, at worst, frustrated. Questions relating to sharing between LEOS and GEOS will need to be resolved with a likelihood that the resolution will drastically limit the maximum capacity of the proposed systems. The Commission admits that "sharing of the RDSS bands by LEO and geostationary systems may require severe limits on power and frequency that could render both systems unworkable." 1/ There is no need to invite this complexity and delay merely to accommodate the expansion of a system that has not yet utilized its allocated spectrum.2/

In short, Ellipsat is concerned that, in trying to maintain maximum flexibility, the Commission may ultimately prevent any system from being implemented. The ultimate victim would be the public which would never receive the benefit of the new and innovative services that have been proposed. Under these circumstances, the Commission should specify that the proposed allocation is designated exclusively for LEO use.

1/ See Notice at para. 17.

2/ The Commission has properly dismissed CELSAT's request for use of the RDSS frequency band. As the Commission points out, the system proposed by CELSAT would not conform to the WARC-92 allocation for the United States. Specifically, the terrestrial component is inconsistent with the international allocations. See Notice at para. 16, n.15.

III.
THE COMMISSION SHOULD DESIGNATE SPECIFIC BANDS FOR PRIMARY LEO FEEDER LINK OPERATIONS

In the Notice, the Commission declines to propose specific new allocations for feeder links for MSS LEO operations.[3/] In the Commission's view, the existing fixed-satellite bands provide sufficient capacity to serve the needs of MSS LEO feeder links.

Ellipsat generally agrees with the Commission that frequencies allocated to the fixed-satellite service (FSS) may be used for LEO MSS feeder links. The definition of fixed-satellite service expressly includes "feeder links for other space radiocommunications services."[4/] Ellipsat strongly disagrees, however, that LEO feeder links should only be permitted on a secondary basis.

In order to justify the substantial investment that is required to implement a LEO satellite system, it is critical that feeder links have the same protection that is accorded to any other fixed-satellite service use. There is no basis in international requirements or elsewhere for restricting LEO feeder link operations to secondary status.[5/] Prompt resolution of the feeder link issue is needed so that companies can move

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3/ See Notice at para. 26.

4/ Commission Rule 2.1.

5/ While the Notice refers to international Radio Regulation No. 2613, this regulation was not intended to apply to feeder link operations.

forward with the ongoing international coordination process and with system design.

For these reasons, Ellipsat urges the Commission to clarify that feeder links for LEOS will be permitted on a co-primary basis in the FSS bands. Alternatively, Ellipsat strongly suggests that particular frequency bands be designated for LEO feeder links. Suitable frequency bands identified by Ellipsat for this purpose are: 3600-3700 MHz (space-to-earth) and 6425-6525 MHz (earth-to-space). The Commission should take steps in this proceeding to allocate these bands for primary LEO MSS feeder links.

IV.
THE COMMISSION SHOULD ADOPT THE INTERNATIONAL PFD LIMITS AND COORDINATION PROCEDURES

The Commission proposes to require licensees operating in the 2483.5-2500 MHz band to comply with the power flux density limits adopted at WARC-92. Use of these bands for MSS and RDSS would also be subject to the coordination and notification procedures adopted at WARC-92.

Ellipsat fully supports the adoption domestically of international power flux density (PFD) limits and coordination procedures that were adopted at WARC-92. All applicants should

be required to comply with the PFD requirements. Systems that fail to comply should be excluded.[6/]

V.
ELLIPSAT AGREES WITH THE COMMISSION THAT THE PUBLIC INTEREST WILL BE BEST SERVED BY MULTIPLE OPERATORS

The Notice indicates that a subsequent proceeding will address MSS service rules and licensing, including the issue of whether it may be necessary to limit operations to a specific type of access method in order to maximize sharing possibilities.[7/] However, the Notice does invite comment on the "potential of each of the proposed access methods to support service by multiple LEO licensees in the new MSS bands." The Notice also solicits comment on the "various access methods that are proposed, to the extent that these methods might affect the allocation of spectrum for MSS and as to how they might promote competition."

Ellipsat agrees with the Commission's tentative conclusion that the public interest will be best served by multiple MSS LEO operators. Ellipsat and other applicants have previously discussed, in great detail, the advantages of spread spectrum CDMA techniques in terms of maximizing the number of systems that can be accommodated, domestically and internationally, in the

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6/ For example, to the best of Ellipsat's knowledge, AMSC's system does not comply with the international power flux density requirements.

7/ Notice at para. 19.

relevant frequency bands. This competitive open entry approach stands in stark contrast to Motorola's proposed use of FDMA/TDMA access methods, which will effectively permit only one system. The Commission should not take any action in this proceeding that would preclude or limit the recognized benefits of spread spectrum access methods, which include lower costs and diversity of services and service providers.[8/]

The spread spectrum applicants have repeatedly expressed willingness to harmonize their systems in order to maximize capacity. Based upon preliminary discussions among the parties, it appears that co-existence among multiple spread spectrum systems can, in fact, be readily achieved.

VI.
BI-DIRECTIONAL OPERATION SHOULD NOT BE PERMITTED IN THE 1610-1626.5 MHz BAND

The Notice proposes that bi-directional operation be permitted on a secondary basis in the 1613.8-1626.5 MHz band. This proposal is solely for the benefit of Motorola which seeks to operate bi-directionally in the L-band spectrum that is now allocated in the earth-to-space direction.

Ellipsat has previously noted its concern that downlink operations in the L-band will make coordination between systems extremely difficult, if not impossible. The current one-way allocation scheme in the L-band should be retained in order to

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8/ See Second Report and Order, 60 R.R. 2d 298 (1986).

maximize the number of systems that can be accommodated. Although bi-directional operation is permitted under international regulations, on a secondary basis, Ellipsat urges the Commission not to authorize downlink transmissions domestically because of the foregoing concerns.

If bi-directional operation is authorized, it is critical that such operations be permitted only on a secondary basis as defined by Commission Rule 2.105(d)(4). Receiving earth stations should not, under any circumstances, be permitted to claim protection from harmful interference from, nor otherwise place operating constraints on, transmitting earth stations operating in the band. The Commission should adopt any other conditions that are necessary to ensure that transmitting earth stations will not be affected if bi-directional operation is permitted.

VII.
ELLIPSAT SUPPORTS THE COMMISSION'S DECISION NOT TO AWARD A PREFERENCE

In the Notice, the Commission reached an initial determination not to grant a pioneer's preference to any of the applicants. In its previous comments on the pioneer's preference issue, Ellipsat noted that, because of the unique circumstances of this proceeding and the technical differences between the systems, a pioneer's preference award could be highly prejudicial. Ellipsat also expressed the view that, if a preference should be awarded, it is the appropriate recipient as the first applicant to file a concrete system proposal.

Nonetheless, in order to avoid further delay in this proceeding and to further the important public interest goal of expediting new service to the public, Ellipsat supports the Commission's tentative decision in this proceeding not to award a preference.[9/]

With respect to the Motorola system, the Commission properly concluded that the Motorola system "does not offer a significant improvement or innovation over the state of the art." [10/] Ellipsat and other parties have fully documented, in their previous ET Docket No. 92-28 submissions, that the Motorola system design is based on technologies previously used or proposed by others, including DOD and NASA.

Ellipsat believes that the Commission's tentative decision not to award a preference will provide the certainty needed to move forward with this proceeding, and to implement service to the pubic expeditiously. For this reason, Ellipsat supports the Commission tentative decision. Nonetheless, it continues to believe that, if a preference should be awarded, it is the appropriate recipient.

9/ Refer to Ellipsat's submissions in ET Docket No. 92-28 for a complete statement of its position with respect to the pioneer's preference. These submissions, which are incorporated by this reference, include: "Opposition of Ellipsat Corporation to Pioneer's Preference Request of Motorola Satellite Communications, Inc.," filed April 8, 1992; "Response to Oppositions and Reply to Comments," filed April 23, 1992; "Reply Comments of Ellipsat Corporation," filed June 12, 1992.

10/ See Notice at para. 49

VIII.
CONCLUSION

For the reasons set forth above, Ellipsat urges the Commission (1) to allocate spectrum in the 1610-1626.5 and 2483.5-2500 MHz bands exclusively for LEO MSS; (2) to allocate spectrum for LEO feeder links on a primary basis in the 3600-3700 and 6425-6525 MHz bands; (3) to adopt international power flux density and coordination requirements; (4) to retain the current earth-to-space direction for the 1610-1626.5 MHz band; (5) not to take any action in this proceeding that would preclude or limit the benefits of spread spectrum access methods; and (6) to confirm its decision not to award a preference in light of the unique circumstances of this proceeding.

Respectfully submitted,

ELLIPSAT CORPORATION

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